

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

REPORT OF EXAMINATION

TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

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Surface Water

(Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

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Ground Water

(Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE April 9, 1992	APPLICATION NUMBER G2-28466	PERMIT NUMBER	CERTIFICATE NUMBER
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NAME Peter J. Bakker			
ADDRESS (STREET) 821 Sheridan Drive	(CITY) Bremerton	(STATE) Washington	(ZIP CODE) 98310-2629

PUBLIC WATERS TO BE APPROPRIATED

SOURCE Queen Ann Hill Well #1
TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE 60	MAXIMUM ACRE-FEET PER YEAR 5
QUANTITY, TYPE OF USE, PERIOD OF USE 5 acre-feet per year	Multiple domestic supply	Year-round, as needed

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION-WITHDRAWAL 550 feet north and 250 feet east of the southwest corner of Section 13.

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION) SW $\frac{1}{4}$ SW $\frac{1}{4}$	SECTION 13	TOWNSHIP N. 22	RANGE, (E. OR W.) W.M. 3W	W.R.I.A. 15	COUNTY Mason
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RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)
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LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

Plat of Belfair View Estates Division 1 and 2 within the north half of Section 24 and the east half of the northeast quarter of Section 23, and Division 1D, Tracts 3, 3A, and 3B in the northeast quarter of the northeast quarter of Section 23; EXCLUDING Division 2C Tract 23, Division 2C Tract 27, Division 2C Tract 26, Division 2C Tracts 28 and 29, Division 2C Tract 30, Division 2C tract 31, Division 1D tract 1C, Division 2A Tracts 13 and 14C, Division 2A Tracts 15A and 14A, and Division 2C Tract 1.

DESCRIPTION OF PROPOSED WORKS

An 8" x 228' well equipped with a 15 horsepower pump, discharging to 6" and 4" distribution lines.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE:

Started

COMPLETE PROJECT BY THIS DATE:

September 1, 1996

WATER PUT TO FULL USE BY THIS DATE:

September 1, 1997

REPORT

BACKGROUND:

Pursuant to Chapters 90.03 and 90.44 Revised Code of Washington (RCW), Peter J. Bakker applied for a permit to appropriate public groundwater. A withdrawal rate of 60 gallons per minute (gpm) was requested for multiple domestic supply to 108 homesites, a number that was later reduced to 99 homesites. The application was assigned a priority date of April 9, 1992.

Legal notice of the proposed appropriation was published in *The Shelton-Mason County Journal* on May 7 and 14, 1992. No protests were received during the 30-day appeal period following this notice, however, the Tahuya River Basin Organization (TRBO) submitted a letter of concern dated April 12, 1993. Among TRBO's concerns are adverse impacts to the Tahuya River ecosystem including the associated wetland and estuarine areas, impacts to existing ground-water users, and consideration of the public interest.

INVESTIGATIONS:

Chuck Lehotsky and Marie Peter conducted a field investigation of the project site on April 20, 1993. Marie Peter reviewed Department of Ecology records of ground-water use and area well logs, contacted Peter Bakker for additional information, and wrote the initial Report of Examination. Chuck Lehotsky provided a hydrogeological overview of the area and evaluated the potential impacts of the proposed withdrawal on the Tahuya River.

Location and Site Description:

The project site is located approximately nine miles west of the town of Belfair, in Mason County. Surrounding areas are mostly forested and sparsely developed. Residential development and resort areas are concentrated to the south, along the shores of Hood Canal.

The well is located near the west boundary of Belfair View Estates, near the bottom of a northwest-facing hillside which overlooks the Tahuya River valley. This part of the valley supports both farmland and riparian vegetation. Homes will be constructed on the ridge top, several hundred feet above the well site. The ridge top has been partially cleared for development.

The well head is situated several hundred feet from the main stream channel of the Tahuya River, approximately 30 to 50 feet above the river. The well is surrounded by a concrete pad and is covered by a small well house.

Water System Description:

The well will supply water to the Queen Ann Hill Water System. The distribution mainline has been installed to part of the proposed service area. A storage reservoir for the water system is located at the top of the hill, toward the east side of the project area.

According to the applicant, the subject well was drilled on August 12, 1986 by P & P Well Drilling. A well log/report was not submitted, and the company has not answered requests from this office for submittal.

Well depth:	±228 feet
Casing diameter:	8 inches
Screened interval:	Unknown
Well head elevation:	Approximately +100 feet MSL
Static water level:	44.58 feet (on April 20, 1993)
Pump size:	15 horsepower
Distribution mainline:	6-inch and 4-inch
Reservoir capacity:	40,000 gallons

Geology/Hydrology of the Project Site

Chuck Lehotsky reviewed this application, visited the site, and conducted an evaluation to assess the potential impacts of the ground-water withdrawals proposed under this project. Mr. Lehotsky's evaluation is summarized as follows:

Based on the geology and water resources of the area as described in Washington Division of Water Resources Water-Supply Bulletin No. 18 (1965), the well site is underlain by glacial outwash deposits, mainly gravels and coarse sands with silt and clay lenses, which overlie deposits of Colvos Sand. Immediately west of the well site, the glacial outwash deposits are overlain by Tahuya River alluvial deposits.

The well most likely draws water from the glacial outwash deposits or the Colvos Sand. No significant confining layers, which would hydraulically separate the well from the Tahuya River, appear to be present within the Colvos Sand, the glacial outwash deposits, or the alluvial deposits. This suggests that there is hydraulic connection between the Tahuya River and the water-bearing zone tapped by the well.

A pump test was conducted on May 5, 1992. The well was pumped at 65 gpm for 4½ hours. After one hour of pumping, 27 feet of drawdown had occurred. After 1½ hours of pumping, the drawdown had stabilized and remained at about 28 feet for the remainder of the 4½-hour pump test. This stabilization of drawdown suggests that an aquifer recharge boundary was encountered within the first hour of pumping. The most probable explanation for this recharge boundary is the nearby Tahuya River. This drawdown response further suggests that there is a hydraulic connection between the Tahuya River and the water-bearing zone tapped by the well.

Tahuya River Flows

Under Chapter 173-515 Washington Administrative Code (WAC), the Tahuya River is closed to further consumptive appropriations from June 15 through October 31, and is subject to specified minimum flows throughout the rest of the year. The control location specified in WAC 173-515 for monitoring Tahuya River flows is at River Mile 2.5, T. 22 N., R. 3 W.W.M., Section 12 (former USGS Station 12068000). Withdrawals of water which would conflict with the purpose of WAC 173-515 cannot be authorized.

The U.S. Geological Survey (USGS) conducted continuous measurements of the Tahuya River between 1945 and 1956 at Station 12067500, located several miles upstream from Station 12068000, in T. 23 N., R. 2 W.W.M., Section 10. The average annual discharge of the Tahuya River during this period was 48 cfs. Mean flows during August and September were typically less than 1 cfs. During 1951, no flow was measured during August and September. The USGS also measured Tahuya River flows at Station 12068000 between July and September of 1947. The mean discharge for this period ranged from 8.4 to 10.9 cfs. Both of these USGS stations have since been discontinued.

Between 1988 and 1990, the Department of Ecology made miscellaneous measurements of Tahuya River flows within a half-mile downstream of the location specified in WAC 173-515 (former USGS Station 12068000). The flows measured by Ecology during May through October were generally at, or very near, the minimum flows mandated by WAC 173-515.

The Tahuya River supports very important runs of coho and chum salmon, including three distinct stocks of chum, and is a moderate producer of chinook salmon (A Catalog of Washington Streams and Salmon Utilization, Vol. 1, Puget Sound Region, Washington Department of Fisheries, 1975). Summer low flows are a limiting factor for coho production.

Impact Assessment

To assess the potential impact of the project on the Tahuya River basin as a whole, the following simplifying assumptions were made:

- Water use by the project is considered to be totally consumptive.
- All ground-water withdrawn by the project would have discharged to the Tahuya River under pre-development conditions.
- The average water use for each hook-up is 300 gallons per day.
- The total number of hook-ups applied for was 99.

Based on the above assumptions, the water requirement for this project would be 29,700 gallons per day, or .05 cfs. Therefore, using the conservative assumption that all water used by the project would normally discharge

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to the Tahuya River, withdrawing this quantity of water from the well would reduce the aquifer's discharge to the Tahuya River by .05 cfs.

This estimated impact represents worst-case conditions in that it assumes all water withdrawn for the project is used consumptively. The proposed service area for the Queen Ann system appears to be located largely within the Tahuya River drainage. Given that the development will be served by septic systems, part of the water used should return as recharge to the Tahuya River basin's ground-water system.

Effect on Existing Rights

The following records of ground and surface water use are on file with the Department of Ecology:

- The nearest wells with a recorded water right (Certificate #G2-27237) are located approximately 3/4 mile to the northwest. These are authorized withdrawals of 440 gallons per minute, 50 acre-feet per year.
- Available well logs indicate that five wells are located within a half-mile of the subject well. The depths of four of the wells range from 418 to 480 feet. The fifth well, located on or near the ridge near Belfair View Estates, is completed at 59 feet.
- No surface water rights have been issued on the Tahuya River downstream of the applicant's well, or for more than a mile upstream of this point. The nearest surface water right is located a half mile away, across the Tahuya River.
- No ground or surface water right claims were filed in Section 13.

Due to the low density of wells in this area, it appears unlikely that withdrawals from the subject well would directly interfere with existing ground-water rights.

Although no surface water rights have been issued in the vicinity of the proposed appropriation, flows have been established under WAC 173-515-030 for the Tahuya River during specific times of the year, and the Tahuya River is closed to consumptive appropriations during the period of June 15 to October 31, each year. Based on the project water requirement of 29,700 gallons per day, the aquifer's discharge to the Tahuya River would be reduced by .05 cfs, a withdrawal which would conflict with the purpose of Chapter 173-515 WAC, and cannot be authorized.

CONSIDERATION OF TAHUYA RIVER BASIN ORGANIZATION CONCERNS:

On April 12, 1993, the Tahuya River Basin Organization (TRBO) submitted a letter relating the following concerns:

- Adverse impacts to the Tahuya River ecosystem including its associated wetland and estuarine areas.
- Construction without proper permits or review.
- Inappropriate location of well, and potential destruction of habitat through vehicular traffic and excavation.
- Possibility of disregard of any permit provisions, including an increase of output beyond permitted capacity.
- Impacts to existing ground-water users, including overdevelopment of the water resource.
- Consideration of the public interest.

Although these concerns have merit, the result of denial of this application would be the creation of a number of small water systems that would be exempt from regulation or oversight. The Department of Ecology discourages the proliferation of small water systems, in favor of larger water systems which can be monitored and regulated more effectively. In consultation with the applicant and the Mason County Department of Health, the number of residences to be served by this system was reduced from 99 to 15 to minimize impacts. It is consistent with the purpose of WAC 173-515 and in the best public interest, to permit a monitored and regulated community water system which will minimize impacts to the Tahuya River system through aggressive conservation, monitoring of water use, and other mitigating measures.

To further minimize impacts, the following mitigating measures shall be included in the provisions of this report:

- Water from this well shall be used only for in-house purposes. The water requirement for domestic supply, in-house use only, should not exceed an average of 300 gallons per day per home. For the 15 proposed connections, this amounts to a maximum of 5 acre-feet per year.
- The service area for this water right shall be limited to the Tahuya River drainage basin.
- An approved metering device shall be installed and maintained. Meter readings and the number of active connections shall be recorded monthly, and an annual summary submitted to the Department of Ecology.
- Future revisions to the place of use authorized under this water right shall be limited to the Tahuya River drainage basin.
- Conservation and improved water use efficiency must be emphasized in the management of the state's water resources, and must be considered as a potential source of water. Accordingly, the applicant shall prepare and implement a water conservation plan approved by the Departments of Ecology and Health.

CONCLUSION:

In accordance with Chapters 90.03 and 90.44 RCW, I find that water is available, in limited quantities, from the source in question, and that the proposed use is of a beneficial nature. This appropriation, subject to the indicated mitigation measures and provisions, should not impair existing rights or instream resources, and should not be detrimental to the public welfare.

RECOMMENDATIONS:

I recommend approval of this application and issuance of a permit to allow appropriation of 60 gpm, 5 acre-feet per year from the subject well, for in-house use multiple domestic supply.

The permit shall be subject to all applicable state regulations and the following provisions:

PROVISIONS:

Installation and maintenance of an access port as described in WAC 173-160-355 is required. An air line and gauge may be installed in addition to the access port.

"An approved metering device shall be installed and maintained in accordance with RCW 90.44.360, WAC 508-64-020 through -040. Meter readings and the number of active connections shall be recorded at least monthly."

"A summary of the previous year's monthly totals of water pumped from this well, and the number of connections served, shall be submitted annually, in the month of February, or upon Ecology's request, to the Department of Ecology, Southwest Regional Office, Water Resources."

The water appropriated under this application will be used for public water supply. The State Board of Health rules require public water supply owners to obtain written approval from the Office of Water Supply, Department of Health, Mail Stop LD-11, Building 3, Olympia, Washington 98504, prior to any new construction or alterations of a public water supply system.

"Future revisions to the place of use authorized under this water right shall be limited to the Tahuya River drainage basin."

"Use of water authorized under this permit/certificate shall be limited to in-house use only."

"The permittee shall inform future Queen Ann Hill Water System users that water use is limited to in house use only. The document, Declaration of Water Service for Queen Ann-Hill Water Division of Belfair View Estates, signed by Peter and Jean Bakker on November 20, 1992, shall be revised to include the provision of in-house use only."

"This permit is subject to the implementation of the minimum requirements established in the Interim Guidelines for Public Water Systems Regarding Water Use Reporting, Demand Forecasting Methodology and Conservation Programs, July 1990 (attached), and as revised."

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Under RCW 90.03.005 and 90.54.020(6), conservation and improved water use efficiency must be emphasized in the management of the state's water resources, and must be considered as a potential source of water. Accordingly, as part of this permit, the applicant shall prepare and implement a water conservation plan approved by the Departments of Ecology and Health. The standards for such a plan may be obtained from either department."

The applicant is advised that notice of proof of appropriation of water (under which the final certificate of water right is issued) should not be filed until the permanent diversion facilities have been installed, and the system is currently in use. This includes installation of a mainline system capable of delivering the recommended quantity of water to an existing or proposed distribution system within the area to be served, and fulfillment of all other terms of this permit.

A certificate of water right will not be issued until a final investigation is made.

REPORTED BY: Don David Date: May 6, 1994

The statutory permit fee for this application is \$20.00.

